Our Public Lands

July 1964

Alaska Rebuilds!

See Page 5

Harry Saindon's Alaska

by Paul Harvey
ABC News Commentator
(Text of actual broadcast, printed through special permission from Mr. Harvey)

Sourdoughs from the old days in Alaska . . .
The restless men of whom Service wrote . . .
The men who followed the northern lights to moil for gold . . .
Or whatever . . .
They were a breed the likes of which will not be again.
Anywhere.
Harry Saindon was one such.
For more than half a century, Alaska has been home to Harry Saindon.
Ride the Alaskan railroad?
Harry helped build the Alaskan railroad.
Then became one of its first locomotive engineers.
He homesteaded in the Matanuska Valley twenty years before you and I ever heard of it.
He mined for gold, cruised timber, ran a roadhouse, piloted a riverboat, and rigged steel at fifty below.
He toted freight when the only way was by dog sled.

He traveled Seward to McGrath when the only way was on snowshoes, one foot at a time, 560 miles.

Harry Saindon, recent years, was sought out as a hunting guide—for no man knew more about wilderness survival.

Last eight years—that last frontier was getting pestered with civilization's problems . . . the government made Harry a land examiner for the Bureau of Land Management.

But then, early this year, they told him it was time to retire.

Harry Saindon didn't want to quit. Virile and vigorous at 74, he saw no reason to retire. But the government goes by the book and the book said 74 was too old. Fellow employees gave him a big farewell party the week before Easter. In Anchorage.

Just a few hours before the big rumble.

The earthquake of 1964 tore down much of what Harry Saindon had helped build up in Southern Alaska.

He saw the railroad ruptured, the highway washed out to sea, his home city, Anchorage, torn out by the roots.

And when the terrible tremblors had done their worst . . .

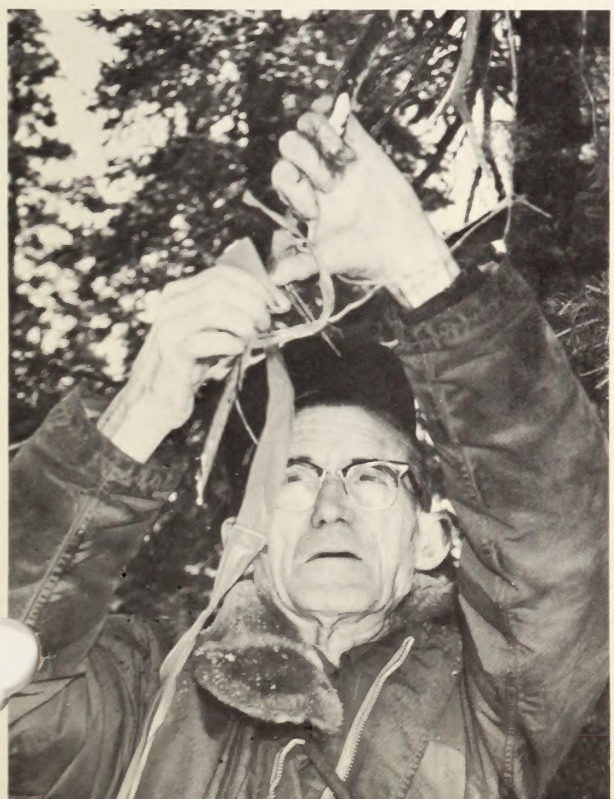
When the seas subsided and the fire was out.

When the dead were all counted up or written off . . .

Who do you suppose stopped only long enough after the last rescue to wash off the grime and the mud and the blood and pick up hand tools and go back to work . . . rebuilding Alaska . . .

Harry Saindon.

"Nothing's ended," he says. "This is the time of beginning again."



OUR PUBLIC LANDS

July 1964 Vol. 14, No. 1

Contents

articles

features

Cover photograph by Bob Olendorff

DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary
BUREAU OF LAND MANAGEMENT
Charles H. Stoddard, Director

Created in 1849, the Department of the Interior—a Department of Conservation—is concerned with the management, conservation, and development of the Nation's water, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.

Issued quarterly by
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Washington, D.C., 20240

The printing of this publication has been approved by the Director of the Bureau of the Budget, February 14, 1963.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Price 15 cents (single copy). Subscription price 60 cents a year, 25 cents additional for foreign mailing.

U.S. GOVERNMENT PRINTING OFFICE: 1964 O—732-088

OUR PUBLIC LANDS is the official publication of the Bureau of Land Management, U.S. Department of the Interior. Issued four times yearly in January, April, July, and October.

Ed. Kerr, Editor

". . . at first only that faint, foreboding rumble like a cattle stampede in a distant valley . . . a vase swung crazily on its pedestal, then crashed to the floor. It was a sound of impending disaster . . . my earth was in convulsion.

"Afterward, strange confusion . . . a deadly hush over the entire valley . . . life seemed to stand still . . . soon a light snow carefully blanketed the chilled, torn earth. . . . Anchorage, Alaska was in shock. . . ."

Now . . . . Alaska Starts Rebuilding

by Elmer W. Shaw

Resource Utilization Specialist
Anchorage, Alaska

Jim Scott often works late. Friday, March 27 was no exception. At 5:36 he was still at his desk struggling with program plans. He leaned back in his swivel chair to relight his pipe and relax a moment from his new job as Anchorage District Manager for the Bureau of Land Management.

Three minutes later the Great Alaskan Earthquake had made Jim's office a shamble of splintered glass, plaster, tumbled bookcases, files, shattered concrete, and twisted steel. When the six-story Cordova Building began to rock and shudder, he knew that his groundfloor corner office was no place to linger. He escaped to the parking lot and looked back. Through a gaping hole in the building's outer shell, he could see the huge I-beam that supported the southeast corner of the structure. It had crumpled and sheared off—not more than 15 feet from where he had been sitting moments before.

On the other side of town in the Turnagain area, Pearl Peters, BLM land law examiner, was pulling into the driveway of her home just as the quake began. Her husband was waiting for her at the door. As she got out of the car, the driveway in front of her buckled then split into a deep crevasse, separating her from her husband. Their house reared up, tilted crazily to one side, broke apart, and began sliding down toward Cook Inlet.

In trying to recall the horrible events of those few moments, Pearl remembered that she looked toward Knight's house next door. It was gone. Later she learned that Mrs. Knight had been swallowed up in a crevasse and killed. Mr. Knight escaped death but had both legs severely crushed. About 75 other fine homes in the Turnagain area suffered the same fate—total loss.

The following week I tried to get some of the details from Mrs. Peters. "I would rather not talk about it," she said. "It's beyond description. Even now, I can't make myself realize all that has happened." Her personal story was dramatically told, however, in the April 10 issue of Life magazine.

When I came by the Cordova Building about half an hour after the quake to check on the damage, Jim Scott was standing guard in the parking lot. He looked dazed and tense. "Don't go near the building," he warned. "No telling what might happen!" I could see he was still scared—and so was I.

From 5:36 on through the night most of the BLM employees in Anchorage were caught up in the crisis, all serving in any way they could. All communications and utilities were knocked out. The whole city was crippled. No one knew then just what had happened or how many people had been killed—or buried alive in the huge crevasses opened up by the convulsions of the frozen earth. What actually happened during earthquake, the tidal waves, and the aftermath that followed has since been told in grim headlines arou the world.

Emergencies are not new to BLM in Alaska. For the highly trained fire control organization, the giant quake was just another urgent call for immediate action. Their response was automatic. Within 15 minutes after the first tremor, BLM guards were on duty at the Cordova Building. Radio nets used to fight forest fires and direct cadastral survey operations were pressed into service and made available for the thousands of Civil Defense messages being transmitted on an around-the-clock basis. BLM planes and pilots took part in the tremendous airlift needed to haul

One of Anchorage's largest department stores as seen the day following the quake. Falling litter crushed one automobile in the lower right corner of the photo.

ndreds of officials and tons of pplies to stricken Kodiak, Seward, Valdez, Whittier, and other desperate villages.

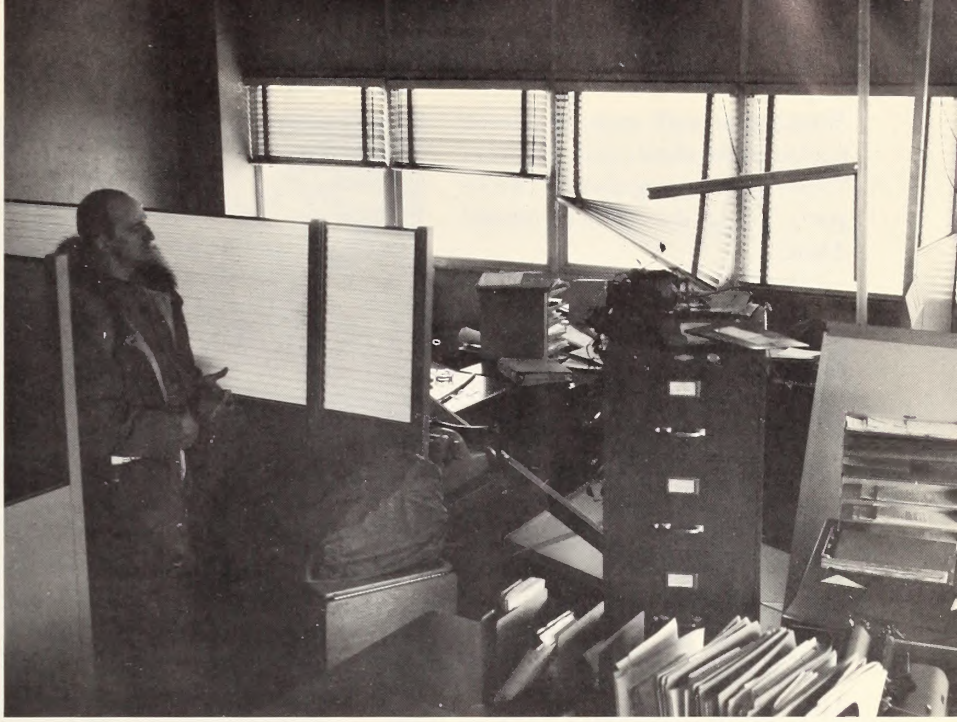
The next day our cadastral engineers were out with their surveying equipment and electronic instruments to help measure the amount of shift in the earth's crust. It was a surveyor's nightmare.

Howard Potter and other photographers were busy getting pictures to document the damage to BLM property. Don MacKinnon, personnel officer, was trying to track down employees listed as missing.

Meanwhile, the less dramatic work went on as usual, but under rather unusual conditions. Division chiefs in hardhats and work clothes began directing the evacuation. All the jumbled files and Land Office records in the Cordova Building had to be gathered up and oved into temporary storage in nset huts. Typists and secretaries in warm slacks and ski pants pitched in to help clean up the mess and keep business moving. In the absence of telephones, key personnel had to use walkie-talkie radios. The whole operation reminded me of a wartime beachhead in the South Pacific.

When I tried to open the door to salvage our BLM library on the fourth floor of the Cordova Building, I couldn't get in. All the bookcases had toppled over and strewn books 4 feet deep across the floor. Even the desk and new typewriter were buried. Books, publications, broken glass, and splinters covered everything.

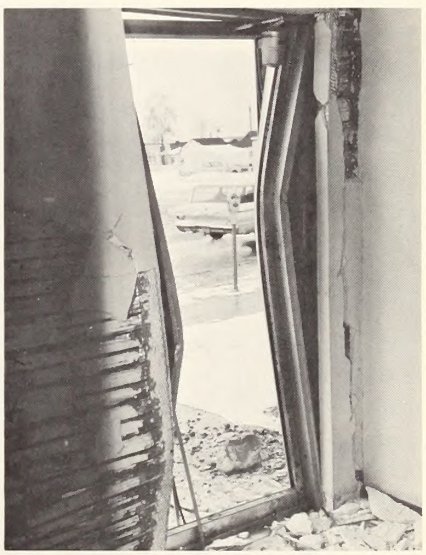
Back in Washington, D.C., BLM officials were beginning to wonder whether we would be able to carry on after such an earth-shaking disaster. State Director Bob Robinson assured them that we would. a telephone conversation with



TOP. State Director Roger Robinson views wreckage in the land office.

RIGHT. South door of Cordova building shows results of shock and compression. As the building gradually settled, the door frame buckled a few more inches each day.

BOTTOM. The Homer Spit area on the south end of the Kenai Peninsula sank almost below the water level.



Washington staff men, Robinson explained the situation in this way: "Sure, we are going ahead! We've got a job to do—to help rebuild Alaska.

"Damage to our offices was heavy, yes. But we are going ahead as planned. Next week our fire school will start in Fairbanks. Our cadastral field crews are set to begin surveying as soon as weather permits. Our Anchorage Land Office has found temporary space in the Federal Building. They will be open for business in a few days. All this takes some doing, but we are definitely going ahead with all our major programs. After all, it was only an earthquake!"

Shoppers at the supermarkets had their problems following the quake.

First Flight to Anchorage

Soon after Alaska's Elmendorf Air Force Base field was reported clear for landing on Saturday, March 28, Bob Wolf of BLM's Washington office was airborne. He was in a special presidential jet, along with Senators Gruening and Bartlett of Alaska, and Ed. McDermott, director of the Office of Emergency Planning.

Wolf's mission was to serve temporarily as departmental officer in Alaska to assess earthquake damage and take necessary action. Especially important was the operational capability of BLM units, which administer most of Alaska's land resources and provide the basic fire control services.

His report, in brief, follows:

"Despite great personal and official property damage, State Director Roger Robinson and his entire staff were already doing everything humanly possible to serve Alaska's needs. All day Saturday, the BLM pilots had been flying mercy missions to outlying towns. They had been to Cordova, Valdez, Whittier and Seward, flying out people needing medical attention. The Bureau had also manned fire control stations, so that equipment would be available wherever needed.

"As far as I could determine on this trip, the major reason for the low death toll was the fact that the people didn't panic. Alaskans have had experience with tremors before, and most of them realized immediately what was happening.

"High priority was given to reconstruction of the Alaska Railroad, under managership of John Manley. Without it the entire State would be in serious economic difficulty. The railroad would provide jobs and, back in operation, it would reopen other payrolls immediately—a very important stimulus, both economically and from a citizen morale standpoint.

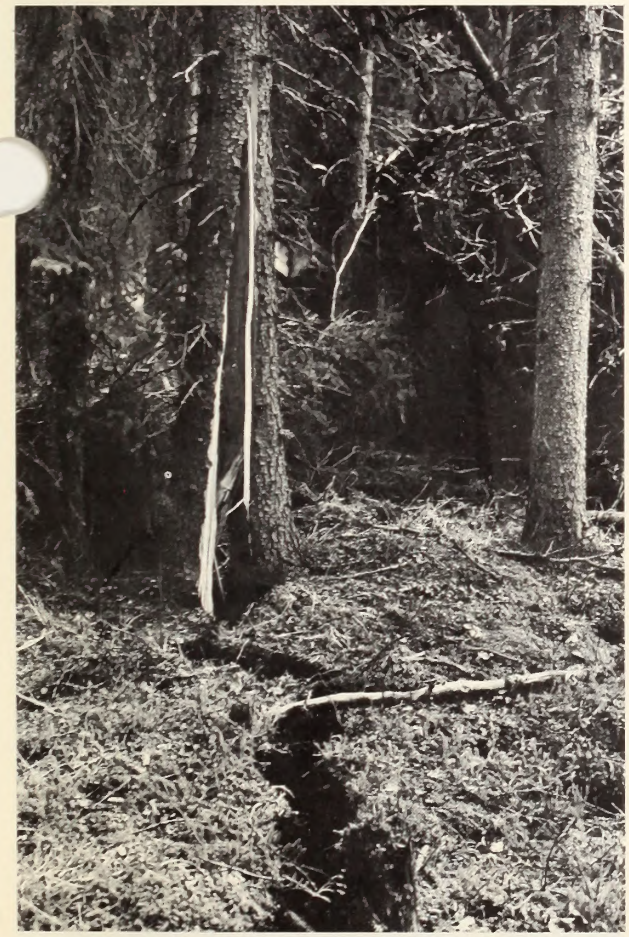
"The second priority was to get the fishing industry back on its feet. With boats and canneries back in operation, payrolls would be restored and Alaska would be back on the road to progress.

"And last but not least, it was essential that the Bureau of Land Management open its doors for 'business as usual', as State Director Robinson so aptly put it. Without basic land records, much of Alaska's development would be seriously curtailed. Surveys must be continued to permit the orderly growth of the state, and the fire control organization must be ready to protect Alaska's valuable resources during the coming fire season.

"Alaska won't be rebuilt overnight. Damages were enormous. It will take the combination of all her natural resources to pull her through."

Many homes were a total loss in the Government Hill area of Anchorage.

BLM surveyors set up their instruments on top of a school building to measure changes in the landscape.



Many trees, such as this 12-inch spruce, were split wide ...en by fissures at the upper end of Lake Eklutna.

Deep-sea divers worked in 38° water of Lake Eklutna to repair broken intake tunnel.

732-088 O - 64 - 2

Anatomy of an Earthquake

—Based on reports by U. S. Geological Survey—

Geologists know that the earth's crust is "restless" and is continually changing as a result of stresses exerted from deep within—maybe from gases, maybe from heat. No one is sure. If the stress isn't too great, the crust is able to flex and stretch to keep from shearing.

For untold years, stresses had been building up in that part of the earth's crust where Alaska is situated, particularly in the rugged, glacier-ridden area of northern Prince William Sound. The massive rock formations comprising this crust flexed to the breaking point but held. But by 5:36 p.m. on March 27 of this year, the pressure had become too great. At a point 12½ miles below its surface (shallow by geological standards) the crust broke.

Shock tremors from this sudden jolt vibrated almost half a million square miles surrounding the point of the break. East of the hinge zone, an area of about 12,000 square miles containing the islands and mainland of Prince William Sound *jumped up* as much as 7.5 feet in land level. West of the zone, where Anchorage and Kodiak Island are located, an area of about 22,000 square miles *dropped* as much as 5.4 feet.

In some areas built on rock the shake wasn't violent; but the unconsolidated materials, under Anchorage for instance, shook like a bowl of gelatin.

Other calamities followed:

The violent ground motion triggered snow avalanches and rockslides throughout the Kenai Mountains, the Chugach Mountains, and the rugged islands of Prince William Sound, blocking many transportation routes between Anchorage, Seward, and Whittier.

Underlain by unstable "Bootlegger Cove" clay, the city of Anchorage suffered mostly from landslid Masses of land simply slid horizontally from the m segment, leaving a gaping ditch. This is what happened on L Street and Fourth Avenue, where whole rows of buildings on the edge of the ditch dropped

Large diagonal crack was formed at head of "L" Street slide in Anchorage. The mass of land simply slid horizontally from the main segment.

—Photo by U.S. Geological Survey

Closeup of house appearing in center of photo at left. Landslide was caused by shifting of the unstable "Bootlegger Cove" clay underneath.

—Photo by U.S. Geological Survey

hen the ditch bank slumped. The same phenomenon curred at Turnagain Heights except that the entire landslide mass broke into a chaotic jumble of "slump blocks".

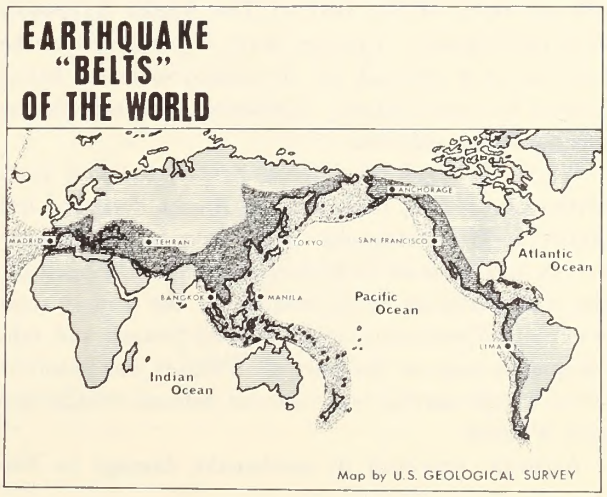
Many waterfront areas were hit by recurrent knock-out punches. First the violent shake and sinking of the land level. Then came submarine landslides which forced sudden withdrawal of water from the areas that the land had occupied. When water came rushing back in to seek its own level, it came back in destructive waves. Finally, the delayed-action seismic waves as high as 30 feet slammed the coastline.

At Seward, water at the site of a former waterfront office is reported to be 30- to 60-feet deep. At Valdez, water in the former dock area is reported to be about 110-feet deep where formerly it was about 35 feet.

The fantastic energy released was greater than that of the 1906 San Francisco quake, and equaled or exceeded that of the largest individual shock of the 1960 Chilean earthquake. It damaged structures and property over a land area of about 50,000 square miles. Ice was cracked or buckled on some lakes and rivers within an area of about 100,000 square miles. The area of perceptibility, if ocean areas could be included, would exceed a million square miles.

Are the new land levels established by the earthquake be permanent? Most likely they will, assuming that all or most of the accumulated strain energy in the shear zone was released. If further displacement should take place during the aftershock sequence, the amount of movement is likely to be relatively minor.

So far as is known to date, this is what happened; but it's not all that happened. It will take U.S. Geological Survey specialists many years to fully assess the changes that occurred in Alaskan rivers, glaciers, mountains and harbors.



TOP. **Scene at toe of landslide in Turnagain area where the land mass broke into a chaotic jumble of "slump blocks."**

CENTER AND BOTTOM. **Destruction along Fourth Avenue where whole rows of buildings slumped into the gaping ditch.**

The Alaska Railroad MEETS ITS GREATEST CHALLENGE

by Edwin M. Fitch

Assistant to the General Manager
The Alaska Railroad

The Alaska Railroad's Golden Jubilee Year was only 15 days old when the earthquake of March 27 damaged or destroyed it to the extent of more than one-fifth of its value—a property loss exceeding $25 million. Yet this destruction, terrible as it was, is not the most significant story of the year of The Alaska Railroad's 50th anniversary. The real story is contained in the response of a railroad and its employees to the havoc created by earth fissures, landslides, land subsidence, seismic waves, and fire.

Within 10 days from Good Friday, the first post-earthquake freight train on The Alaska Railroad left Anchorage for Fairbanks. Two days later passenger service was resumed between those cities. On April 20, the transportation crisis created by the almost total waterfront destruction at the port of Seward and substantial damage at the port of Whittier was resolved when freight service was restored between Anchorage and Whittier.

Accurate appraisal of earthquake damage to The Alaska Railroad was slow in reaching the Department of the Interior in Washington. This was because the area of damage was so extensive and because communications on the Saturday and Sunday following the earthquake were either unreliable or nonexistent.

The first message which reached Interior about the Railroad and about the Bureau of Land Management operations in Alaska did not come through official channels at all. At about 4:00 a.m. on Sunday morning, March 29, a White House aide called the assistant to the General Manager of The Alaska Railroad at his home in McLean, Va., and asked him to stand by for an important message from Reno, Nev.

After some delay a telephone connection with Reno, Nev. was made. A ham radio operator who identified himself as Mr. Griffin, airman third class at Reno, then reported a relay message from Mr. Robinson of the Bureau of Land Management in Anchorage. According to the message the Railroad had experienced losses in excess of $17 million.

On Sunday afternoon the first postearthquake call came through to the Department from John E. Manley, General Manager of The Alaska Railroad in Anchorage. Manley reported that his tentative estimate, aft

helicopter survey, indicated damage to the Railroad excess of $20 million. He reported that from Healy north there was no damage and that the movement of coal trains from the Healy field to Fairbanks was continuing without interruption. From Healy south to Anchorage the damage was far less severe than from Anchorage south to Whittier and Seward. There had been extensive landslides from Potter to Portage and from Portage to Seward.

Later reports indicated even greater damage. The seismic waves that followed the earthquake virtually destroyed the Railroad docks and other waterfront facilities at Seward. Marine landslides changed the depth of water in front of what was left of the Railroad docks from 35 feet to more than 100 feet. Two tank farm facilities were destroyed. The oil fire that followed added to the destruction of yard facilities and rolling stock.

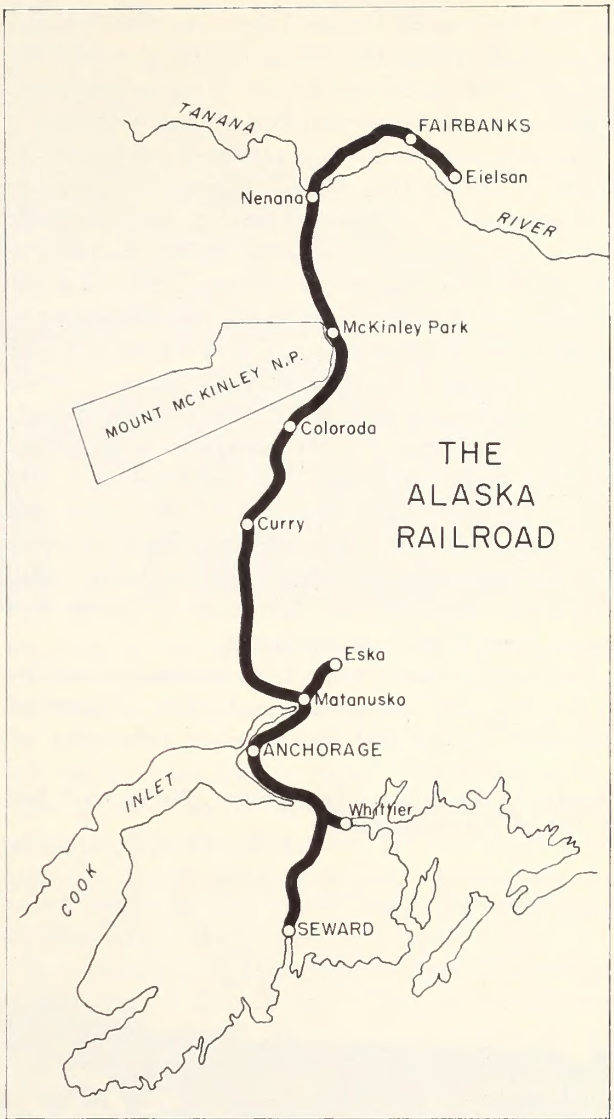
Equally severe earthquake damage extended from Seward over the Kenai Mountains to Portage, and along Turnagain Arm to Potter. In addition to earth fissures, slides, and twisted track and bridges, the geography of the Portage end of Turnagain Arm had been greatly changed.

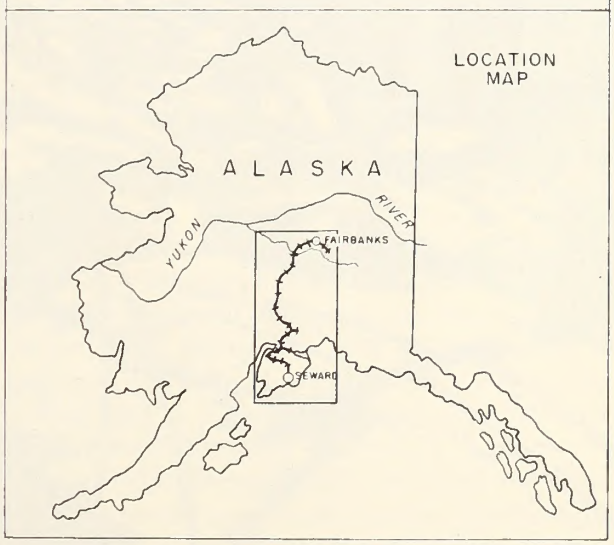
At Whittier the Railroad car-slip, essential to the car-ferry operations from Prince Rupert and from Seattle, was destroyed. There was also damage to the Whittier dock, and to yards, tracks, and buildings.

Along Turnagain Arm, high waters coming two weeks after the earthquake were responsible for substantial additions to Railroad damage. Here the Railroad follows a narrow bench between sea and mountain. For more than 30 miles of this part of the track

Rubble left along the tracks by seismic waves included a lone boat stranded on dry land.

—Photo by Alaska Railroad





the land had subsided about 5 feet. As a result of the extraordinarily high tides at the middle of April, long sections of the track were flooded, some sections were washed out, and the town of Portage was inundated.

The high tides at Portage produced a dramatic incident at Twenty-Mile River. Here a multiple-span steel railroad bridge was threatened by the tidal flood, with a river full of ice, jamming against the piers at ebb tide. Alongside was a highway bridge that the earthquake had almost completely destroyed. If the bridge over Twenty-Mile River went out there would be a week to 10 days additional delay before a temporary bridge would permit train movements through Portage to Whittier. In the emergency it was determined to weight the bridge down with cars each containing 100,000 pounds of gravel. These loaded cars were edged onto the bridge with the chance of losing both the cars and the bridge. But the bridge held, and a few days later the first train of loaded cars moved from Whittier to Anchorage.

By Sunday, April 29, the General Manager and his engineering staff had already made their estimates of temporary repairs that would permit resumption of service. The Department of the Interior was advise that, within 2 to 3 weeks, trains would be operatin to the Matanuska coal fields, to Fairbanks from Anchorage, and to Whittier from Anchorage. To open the line to Seward would take 6 weeks more.

Emile Elbe was the only earthquake fatality among Railroad employees, and his death was occasioned by a heart attack. The infant daughter of one employee, and a retired yard foreman, were other Railroad victims of March 27.

Reconstruction of The Alaska Railroad meant concentration on track, roadway, and bridges, with the heaviest effort applied to the track between Potter Hill on Turnagain Arm and Portage. Earth moving equipment was assembled to attack the slides. As many track gangs as possible were moved in to place rock and gravel fill, and to replace ties and rail.

Railroad officials had their daily work conferences at six-thirty every morning. Overtime piled up wherever it was required. Union officials representing Alaska locals cooperated to the fullest extent. Train and engine servicemen said to management officials "Use us in any way you want. If labor agreement penalty rules interfere with the necessary work assignments we will forget about the rules."

With this kind of cooperation and this kind of em

Damage to the railroad near Potter. Notice track bed to left of sprawling rails.

—Photo by U.S. Geological Survey

The fury of the 200,000 megaton jolt and the tidal waves that followed did strange things to the Alaska Railroad.

—Photo by U.S. Forest Service

ployee loyalty, management's timetable for the resumption of transportation service was beaten except in the case of Whittier. On April 6, freight service was restored between Anchorage and Fairbanks. On April 7, coal trains started moving from Jonesville on the Matanuska Valley branch line into Anchorage. On April 11, passenger service began between Fairbanks and Anchorage.

Railroad officials had hoped to reach Whittier by train on April 14. But the high water along Turnagain Arm and at Portage during mid-April produced a week's delay.

It will be recalled that the car-slip at Whittier had been destroyed. Whittier had been rapidly developing as a car-ferry port prior to the earthquake. Loaded freight cars were taken by tug and barge from Seattle and from Prince Rupert, and, by means of the car-slip at Whittier, were pulled off the barges by yard locomotives. They were then assembled into trains and dispatched on their way to Anchorage and Fairbanks. With no car-slip at Whittier and a damaged dock, other means of handling freight had to be found.

The answer to the problem was provided by the U.S. Army and the U.S. Navy. Within a week after the earthquake the Army agreed to loan the Railroad a floating crane—a million-dollar piece of equipment—with a maximum lift of 200,000 pounds. If this crane could be sent to Whittier, loaded cars and vans could be craned from barges to the Railroad's tracks at Whittier.

The Navy agreed to use the 3,000 horsepower Navy tug *Sioux* to take the big floating crane to Alaska. On April 3, the *Sioux* left Seattle for Beaver, Oreg., to pick up the Army floating crane. The skipper of the *Sioux* gambled on the weather and took the outside passage to Whittier. As a result, the crane arrived on April 13. In the meantime, a National Guard tug departed Seattle for Whittier to service the crane after the departure of the *Sioux*.

It was thus due to the combined efforts of the Army and the Navy and employees of The Alaska Railroad that a train reached Whittier from Anchorage on April 20. On the same day loaded cars that had accumulated in the Whittier yards during the previous week were on their way to Anchorage. In 3 days the congestion in the Whittier yard had cleared up and the Railroad, with one train a day, has since been able to keep up with all freight landed at Whittier. On some days this has meant 125 loaded freight cars out of Whittier, which is quite a train on anybody's railroad.

The one-train-a-day means the least interruption with track rehabilitation along Turnagain Arm. Thousands of tons of rock and gravel are being placed in this section of the track to keep it out of reach of Turnagain Arm tides. In the meantime, a new car-slip is being built at Whittier which may be in operation before this article appears in print.

Millions of dollars must still be spent before installations are repaired permanently, but the crisis has been met. The Alaska Railroad, a vital link in the State's economy, is back in operation.

Tragedy at Chenega Village

Statistics showing "a low casualty rate" from the Alaska earthquake have little meaning to Indian inhabitants of the Chenega village on Kodiak Island, who lost one-fourth of their population from the tidal wave which followed. The 57 survivors are being moved, under supervision of the Bureau of Indian Affairs, to a tent camp at Tatitlek, where their new homes are being built.

Chenega was one of four Indian villages wiped out in the disaster. Kaguyak, Old Harbor, and Afognak—all fishing villages located on the waterfront—were almost completely destroyed and their survivors are being relocated, temporarily or permanently, by the Bureau of Indian Affairs.

BIA's 15-man Anchorage staff swung into action within hours after the quake to deliver emergency supplies to Kodiak. By coordinating with other relief agencies, they assured stricken villagers of food, clothing, and temporary shelter.

Former residents of Kaguyak have accepted the generous offer of the village of Alitak to relocate there, where they will live with Alitak families until their future homes are erected under the technical supervision of BIA.

Old Harbor villagers have returned from emergency shelter at Camp Denali to their ravaged village, where they will live in tents while they work to rebuild and replace 6 homes damaged and 32 destroyed by the Good Friday disaster. Camp Denali, summer home of the Alaska National Guard, was used by the Bureau to shelter evacuees from Kaguyak also.

Thirteen of Afognak's 38 homes remained as suitable dwellings following the tidal wave, but BIA has judged the village site to be unsafe from tidal action. Relocation to a new site at Settler Cove is underway. BIA is also providing technical assistance to English Bay and Ouzinkie in those villages' repair and reconstruction programs.

The USMV *North Star*, BIA's freighter which normally makes two runs from Seattle to Alaska each year, was alerted at its Seattle berth to commence loading an extra 1,005 tons of emergency food, tents, building materials, and other supplies for the stricken villages. Less than 4 weeks after the earthquake the *North Star* was unloading its cargo at Old Harbor for use there and for shipment to other points.

Four weeks after the earthquake BIA had spent $175,000 as a direct result of the disaster over and above its regular fiscal year 1964 programs in Alaska, for administrative costs and emergency purchases of food, fuel, clothing and other items for evacuated natives and damaged villages. Continuation of emergency services will cost the Bureau $140,000 more by the end of the current fiscal year June 30.

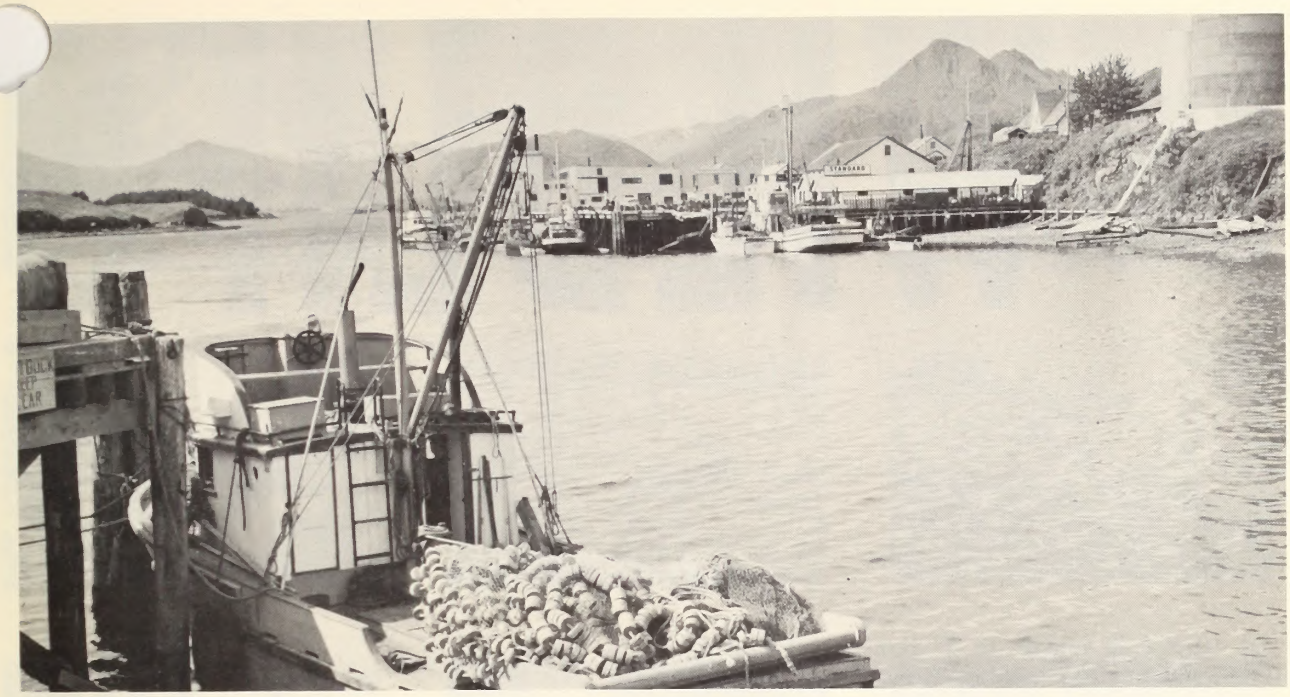
The Bureau anticipates that the $1½ to $2 million necessary to rehabilitate damaged communities will be provided by the Bureau and other Federal and private agencies with applicable disaster relief programs. The Bureau itself expects to incur $200,000 in additional obligations in fiscal year 1965 as a direct cost of the village rehabilitation program and may be required to spend as much as $250,000 additional for general assistance.

The Bureau is in the midst of planning summer classes for children temporarily deprived of schools by the disaster; these children will also receive preference when applying for enrollment in the Bureau's various boarding schools for the next school year. The Bureau has augmented its program of voluntary relocation of Alaska natives and their families to new jobs and communities in Alaska and the lower 48 States to assist all native workers who may now wish to find employment or to enter training outside of Alaska.

Four-Point Program Aims To Rebuild Fishing Industry

The immediate damage to Alaska's fishing industry can be readily assessed. For instance, more than 200 vessels were lost and about 100 more were damaged. In addition, some 10 processing plants were lost and about 14 damaged. Tectonic uplift during the quake left most of the extensive razor-clam beds off the mouth of the Copper River above the reach of normal tides, thereby resulting in their virtual extinction.

But what of the ultimate damage due to land shifts? According to Clarence F. Pautzke, Commissioner of the U.S. Fish and Wildlife Service, some of the remaining processing plants of Kodiak and Cook Inlet may have to be moved to higher ground, a very costly operation. In the Cordova area, where the land rose, some of the moorages don't have enough water to float fishing boats and some plants are isolated from navigable waters. Even the navigation channels in Prince William Sound have now been changed.



Scene of Kodiak Island salmon fishing fleet in calmer days. More than 200 vessels were lost during the quake and seismic waves that followed.

—Photo by E. P. Haddon for Fish and Wildlife Service

In many areas in Prince William Sound, the intertidal zones known to be spawning areas for pink salmon have either been silted over as a result of the land and water distrubances or have been elevated to such a height that they cannot be used by the spawning salmon. These are some of the long-range problems concerning Interior's Fish and Wildlife Service. Meanwhile, a four-point program is underway to help rebuild Alaska's fishing fleet:

1. Interior is providing loans to fishermen for boat repairs. As of May 7, 28 loan applications for a total of $526,000 were approved.

2. Congressional authority was granted for the use of fisheries loan funds to charter fishing vessels, so temporary replacements could be made for the coming season.

3. Loans are being made available through the Small Business Administration for repair of processing plants.

4. Congressional legislation is being sought to provide up to 55 percent of the cost of new vessel construction in the form of subsidy. This, coupled with disaster loans from the Small Business Administration, would enable fishermen who have lost their vessels to replace them with new ones. It is hoped, according to Pautzke, that a new and efficient fleet of Alaskan-based vessels might someday compete on the high seas of the Northeastern Pacific for those resources now harvested almost exclusively by Japanese and Russian vessels.

Sport Fisheries and Wildlife Loses Kodiak Patrol Boat

The Bureau of Sport Fisheries and Wildlife lost a 23-foot patrol vessel, the "Kodiak Bear", in the high tides following the recent earthquake, in addition to a small warehouse and dock facilities at Kodiak. The boat was used for patrolling of Kodiak refuge.

Since Sport Fisheries and Wildlife suffered comparatively light damage, their personnel were able to assist the State in damage survey and other work.

The Division of Wildlife is making a joint study with Alaska game and fish authorities on waterfowl habitat damages in the coastal marsh section of the earthquake area, especially in the Copper River delta area. The extent of damage to nesting grounds by lowering and raising of land levels will not be known until the investigation is completed.

No Damage to Parks

The National Park Service had the pleasant task of reporting no damage to agency property by the Alaskan earthquake. McKinley National Park suffered only a temporary cutoff of supplies, due to flooding of the Alaska Railroad.

WILDLIFE on the PUBLIC LANDS

Of nationwide appeal—to Westerners and Easterners alike—have been the millions of fish and wildlife residents occupying our public lands. Whether identified by fur, feather, or fin, their value to a Nation of outdoor lovers is priceless. But full beauty of our wildlife heritage on these lands has never been portrayed.

Now, for the first time, the Bureau of Land Management offers the public an armchair tour of Western wildlife—and by two different modes of transportation, so to speak. Both a 50-slide program packet and a 4-color brochure are available, presenting vivid photographs of wildlife in their natural habitat. For these presentations, we are indebted to Jim Yoakum, BLM's wildlife specialist in Nevada, who devoted many months of his own time to "bringing them back alive" on film.

Yoakum's photos, samples of which are shown on these pages, show wildlife in the widely varied habitat, topography and terrain offered by our public lands in 10 Western States and Alaska . . . the bobcat in a Southwestern joshua tree . . . a sage-grouse hen in the Great Basin area . . . and, where the plains give way to forests, twin mule deer fawns. Up in Alaska, we find the bull moose, king of the Alaskan wilds, and many more.

The slide series, complete with explanatory notes, is available on loan. Simply fill in the coupon and send it to Bureau of Land Management, U.S. Department of the Interior, Washington, D.C., 20240.

The wildlife brochure can be obtained at a cost of 35 cents by writing the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Title is "Wildlife on the Public Lands."

1.

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10. 

IDENTIFICATION: 1. Bobcat in joshua tree. 2. Mountain lion. 3. Antelope kids. 4. Robin. 5. Weasel. 6. Bull moose in the Alaska wilds. 7. Adult Canada geese. 8. Coyote pup. 9. Yellow-bellied marmot. 10. Bull elk.

TO: BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C., 20240

Please mail me your slide series entitled "Western Wildlife" for showing to _____
(Club)

_____ of _____, on _____.
(City and State) (Date)

I understand there is no charge, and that it must be returned within 1 week after the showing date.

Signed _____ _____
(Street address)

_____ _____
(Please print name) City and State)

$\beta + \Sigma = A = \$$

A NEW EQUATION FOR PETRIFIED WOOD

BY SHERMAN PEARL

With the skill of a master craftsman, Mother Earth has produced some wonderful rocks. In the course of countless eons, she has taken fragments of undistinguished substance and converted them to glittering gems. She has processed cadavers into imperishable ornaments. But with a lady's taste, she fashioned only enough of the jewelry to make it precious, displayed it only enough to add to her mystery.

And then, as if in response to her need for admiration, came man.

Respond he did. With a vengeance. His esthetic eye was soon drawn to certain strange and brilliant minerals; and finding that his neighbors were equally attracted, he was quick to make the equations:

Beauty + rarity = demand = wealth.

The quest for glorious minerals (and for the glory acquired in the finding) continues today. Diamonds are still dazzling, and retain their value; gold is the international monetary language. The story is the same, but another chapter is being added by a new breed of prospectors seeking new types of minerals. And for them, the old formula doesn't hold.

These "prospectors" are popularly called rockhounds. They are amateurs. When they scour the hills during summer vacations or on weekend excursions, their reward is partly the "hounded" rock (rather than its monetary value), partly the search itself.

And among the minerals they seek most avidly [illegible] petrified wood. In fact, the rise of rockhounding s[illegible] World War II has created a wide-scale demand for the mineral.

Rockhounds in burgeoning numbers helped to spread the word about petrified wood—about its varicolored

Petrified wood deposits are of interest to both rockhounds and "scenery" hounds as well. New Interior regulations are designed to assure that supplies remain for future generations. These deposits are located in northeastern Arizona.

uty as it lies on the land in stumps and chunks, out its multimillion-year process of becoming "petrified," about the many ways it can be sawed and polished. Others listened, were fascinated, and came in droves to acquire their own. Most came in the spirit of rockhounding, serving only their own recreational needs. But a few followed the ancient pattern of exploitation.

They used blasting devices and power equipment to dislodge the material wherever they could find deposits. Then they hauled it away by the truckload.

Wholesale Use

One magnificent stump, some 14 feet in diameter and lined with white growth rings, was sold for $600 a ton on the open market.

Commercial interests collected petrified wood to sell to tourists, or for gross display at their establishments. Homeowners turned large amounts into fireplaces, rock gardens and masonry.

The issue began to simmer. How long, at this rate, could the deposits withstand the assault? How much of the material should individuals be allowed to remove without causing rapid depletion? The concern of rock collectors and other interested citizens soon reached Federal attention. The Bureau of Land Man-ment was particularly involved because much of the al amount of petrified wood, including some of the rich deposits, is situated on public lands in the West. A great deal of the accelerating wholesale removal was taking place on these lands—without authorization.

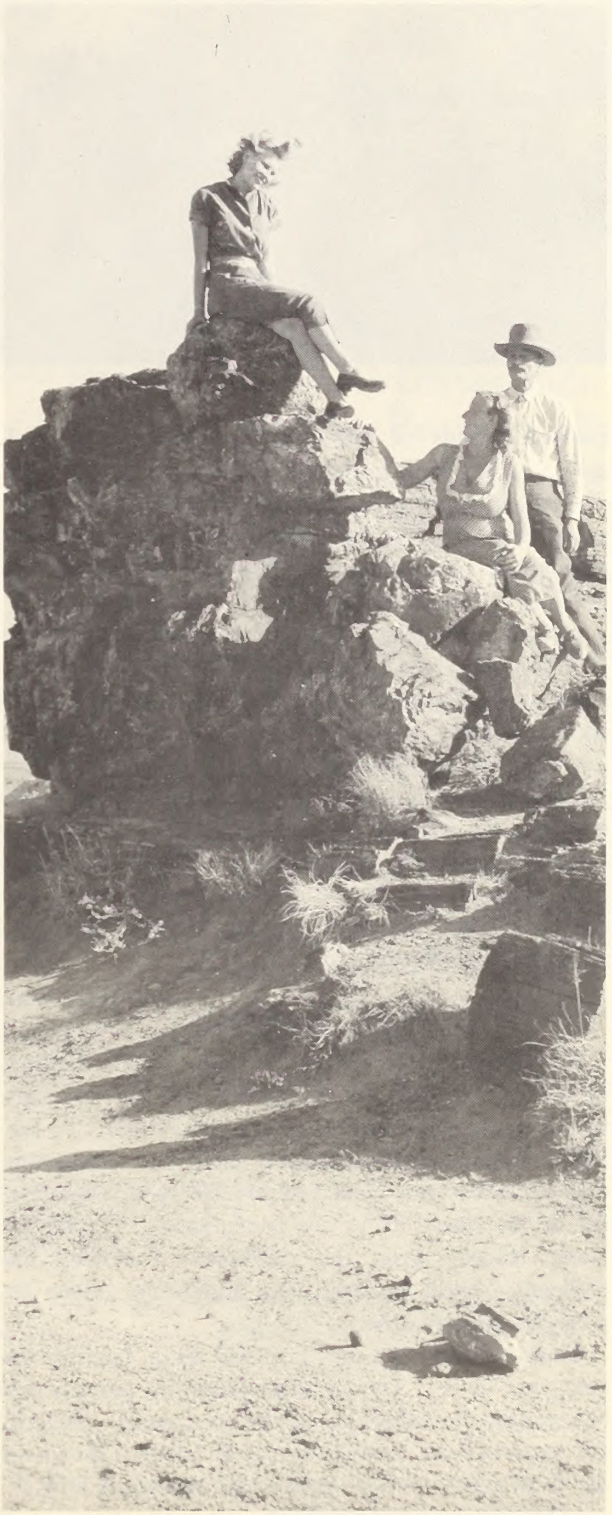
Something had to be done. Deciding that this mineral's major value was recreational, not commercial, Congress acted in 1962. With the passage of Public Law 87–713, Congress specifically excluded petrified wood from location under the mining laws, and directed the Secretary of the Interior to limit and regulate free removal.

New Regulations

Secretary Stewart L. Udall has carried out this mandate of new Federal regulations authorizing limited petrified wood collections on public lands. Under the new rules, each collector may daily take up to 25 pounds, plus one piece (so that a large log does not have to be broken), without charge. With this privilege goes a provision: The fossilized mineral must be used for recreational and hobby purposes only. It may not be bartered or sold. The annual limit per person is 250 pounds.

Secretary Udall explained the Interior Department's regulatory action this way: "We have a dual responsi-ity. First, we have to recognize the legitimate rec-

Petrified wood has been a tourist attraction since deposits were first uncovered in the West. This photo, as seen by the people's attire, was taken more than 30 years ago.



reational needs of the growing numbers of rock collectors who flock to the public lands each year. But of equal importance is the need to preserve quantities of petrified wood for the pleasure and interest of future generations of rockhounds. The new regulations are designed to meet both goals."

Open to collection are more than 464 million acres of public land administered by BLM, and 7.5 million acres under Bureau of Reclamation jurisdiction. But certain specific areas, such as constructed reservoir project sites, are excluded.

Under the terms of the enabling act, petrified wood may not be collected in any national park, national monument or on any Indian lands. Other public lands, such as those in national forests, game ranges, and certain military reservations may also be opened to collection in the future.

Hand Tools Only

Rockhounds may be in for some tough digging. Most of the deposits are still buried, and the new regulations permit only hand tools for excavation. To further forestall depletion, several small but outstanding deposits have been identified and closed to collectors. All of the closed areas are being posted. Some are being fenced. And the rockhound fraternity has pledged to assist in identifying additional unique deposits for preservation.

These conservation measures will be on trial for the next year or so. During this period, no permits will be required for collection on the open areas. Permits for removal from closed sites may be issued if the pieces are to be put as public display and sometimes may exceed the 250-pound annual limit.

The regulations will be reviewed at the end of the trial period by interested agencies, organizations and individuals. When the evidence is in, rockhounds and Federal officials will be able to pass judgment on the new rules—on their adequacy in providing for present and future recreational needs.

Collectors, of course, are not solely interested in petrified wood. The regulations do not extend to ot minerals they value—agate, obsidian, jasper, and thu der eggs. Over a period of years, studies will be made to determine if new steps should be taken to protect materials other than petrified wood, both to enhance their recreational values and to minimize conflicts with commercial uses of minerals and other resources on the public lands.

How much pertified wood exists today? Nobody knows for sure. There has been no inventory of deposits, but there is general information on the location of thousands of tons of the material—enough to appease the rockhounding appetites of many generations to come, but a miniscule amount under the traditional practice of exploitive depletion.

New Equation

The point is this. For petrified wood and the other "hounded" minerals, the old equation, demand= wealth, is no longer workable. For these national treasures, which future Americans deserve as part of their heritage, a new kind of figuring is needed. It could be this:

Demand + conscientious use = high recreation val for all.

Drilling on Kaibab Now in Progress

The first oil drilling exploration on the North Division of the Kaibab National Forest in Arizona is in progress. The North Kaibab was opened to oil exploration by a joint decision made last summer between affected agencies of the Departments of Agriculture and Interior.

A special use permit conditioned on the agreement for the first drilling was approved by the Forest Service of the Department of Agriculture on March 27 at a meeting with Arizona Game and Fish Commission representatives in Phoenix. Earlier, the two agencies met on the site of the proposed drilling.

The decision to open the area was made after 35 stipulations were adopted assuring protection of the wildlife resources and the natural beauty of the area. Drill sites will not be permitted within view of main highways or within one-half mile of present or proposed recreation areas and other developments.

Included in the permit along with other stipulations is the following: "The drill site will not occupy more than 1 acre; road construction and improvements will be to Forest Service standards; all pipelines away from the drilling site will be buried below the surface of the ground; and after use of the site ceases it will be restored as nearly as possible to the original condition by seeding, mulching, reforestation or whatever measure is needed."

Regulations Revised

Regulations governing the use and management of the Nation's public domain lands are being released in a new and more efficient format.

The revised format, which includes a new numbering system, is designed to place the regulations in logical order according to subject matter. Appearing in Title 43 of the Code of Federal Regulations (CFR), they will be published as a chapter II supplement to the 1964 edition of that volume.

Harold R. Hochmuth, associate director of the Bureau of Land Management, said that the new system will "simplify the use and handling of the regulations, making them an easier source of reference for anyone dealing with public land."

Offshore Drilling Bids Set New Per-Acre High

A new per-acre high for oil and gas leasing was set April 28 at BLM's lease sale of offshore tracts in the Gulf of Mexico near Louisiana.

Among the 28 tracts put up for lease was one which brought a record bid of $10,490.40 per acre. Gulf Oil Corp. and Phillips Petroleum Co. combined to offer $13,113,000 for the 1,250 acre parcel. The previous per-acre record was $10,442.08, set by Shell in 1959.

Only five of the available parcels did not receive bids. An overall average of $1,846.69 per acre was received, and the total intake was $60,340,622.

UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON, D.C. 20402

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(GPO)

New Emblem Chosen To Symbolize BLM

No doubt many readers have already noticed the new BLM insignia on the title page of this issue. It was completed in May and approved for official use by Secretary of the Interior Stewart L. Udall.

The basic resources—land, water, and vegetation—are the key design elements. They represent the Bureau's concern with the conservation and management of *all* natural resources on the public lands.

The new insignia replaces the circular seal which was adopted in 1952. This was the

The Old

Bureau's first emblem following its creation in 1946 from a merger of the historic General Land Office and the Grazing Service.

"The new emblem symbolizes our increased emphasis on balanced use of the public domain, rather than concentration on special uses," according to BLM Director Charles H. Stoddard.